APPENDIX J

SURVEY COORDINATES

Appendix J

Survey Coordinates
Fill Areas and Landfills
Fort McClellan, Calhoun County, Alabama

Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FA-78-SB01	1169828.921	664963.838	776.08	
FA-78-SB02	1169987.875	665155.317	783.02	
FA-78-SB03	1170175.927	665275.785	781.59	
FA-78-L1-0 N	1170309.290	664674.816	807.64	
FA-78-L1-350 S	1170016.091	664864.088	800.52	
FA-78-L10-0 N	1169745.102	665308.963	755.87	
FA-78-L10-300 N	1169899.889	665053.247	777.16	
FA-78-L11-0 N	1169543.907	665025.447	764.17	
FA-78-L11-300 N	1169836.893	664972.367	777.47	
FA-78-L12-0 E	1169794.948	664673.011	773.66	
FA-78-L12-100 E	1169809.039	664772.260	774.19	
FA-78-L12-330 E	1169841.325	664999.668	775.41	
FA-78-L13-350 E	1169924.861	664954.626	788.94	
FA-78-L14-0 E	1170074.333	664557.531	785.27	
FA-78-L14-350 E	1170026.095	664902.583	799.98	
FA-78-L2-0 N	1170309.290	664674.816	807.64	
FA-78-L2-0 N-1	1170326.284	664872.038	806.85	
FA-78-L2-200 S	1170130.396	664912.153	801.63	
FA-78-L2-350 S	1170032.671	664932.325	799.90	
FA-78-L3-0 N	1170374.219	665053.213	812.76	
FA-78-L3-200 S	1170219.334	665130.294	798.09	
FA-78-L3-300 S	1170108.311	665190.332	791.22	
FA-78-L4-0 N	1170429.862	665178.206	801.38	
FA-78-L4-350 S	1170119.662	665335.419	776.89	
FA-78-L5-0 E	1170421.294	665388.928	778.06	
FA-78-L5-WB	1170174.318	665193.627	790.60	
FA-78-L6-0 E	1170359.062	665527.205	770.02	
FA-78-L6-300 W	1170129.169	665336.530	776.83	
FA-78-L7-0 N	1170163.390	665585.406	754.86	
FA-78-L7-330 N	1170333.299	665303.969	783.14	
FA-78-L8-0 N	1170040.279	665512.221	758.94	
FA-78-L8-300 N	1170189.050	665253.347	785.48	
FA-78-L9-0 N	1169950.416	665436.971	758.72	
FA-78-L9-300 N	1170098.825	665179.803	791.73	
FA-78-LF1-D02	1169853.220	665296.159		
FA-78-LF1-G01	1170290.748	664874.422	796.36	796.00
FA-78-LF1-G02	1170126.763	665573.486	743.53	743.53
FA-78-LF1-G03	1169724.792	665328.472	739.91	742.41
FA-78-LF1-G04	1169634.648	664832.902	737.22	739.64
FA-78-LF1-S01	1169836.590	665315.661		
FA-78-LF1-S02	1169846.657	665296.085		
FA-78-LF1-S03	1169739.372	665206.267		
FA-78-LF1-S04	1169837.147	665266.442		
FA-78-LF1-W02	1169853.220	665296.159		
FA-78-T1 EB	1170057.671	664647.571	788.55	
FA-78-T1 WB	1170061.583	664608.567	785.55	

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Fort McClellan, Calhoun County, Alabama

Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FA-78-T1 end	1170048.769	664701.305	789.61	
FA-78-T1 end-2	1170053.564	664674.998	790.39	
FA-78-T1-SB	1170045.497	664708.015	790.60	
FA-78-T2 NB	1169820.842	664853.818	779.31	
FA-78-T2 SB	1169810.382	664808.421	774.14	
FA-78-T2 FB	1169814.958	664828.098	774.86	
FA-78-T3 EB	1169697.047	664995.817	763.81	
FA-78-T3 WB	1169762.112	664986.084	767.44	
FA-78-T3 FB	1169738.438	664990.169	764.51	
FA-78-T4 SB	1169800.391	665215.762	762.27	
FA-78-T4 FB	1169811.136	665196.850	762.26	
FA-78-T4 FE	1169840.895	665162.835	767.26	
FA-78-T5 SB	1170066.924	665419.776	761.87	
FA-78-T5 FB	1170075.587	665403.665	765.32	
FA-78-T5 FE	1170096.506	665370.112	772.67	
FA-78-T6 SB	1170217.197	665404.616	772.10	
FA-78-T6 FB	1170214.173	665401.572	772.56	
FA-78-T6 FE	1170199.940	665390.615	774.79	
FA-78-T7 SB	1170345.135	665221.303	795.46	
FA-78-T7 FB	1170340.901	665223.259	794.56	
FA-78-T7 FE	1170314.362	665237.465	792.94	
FA-78-T8 N extension	1170178.615	664900.691	800.55	
FA-78-T8 N extension-fill	1170176.920	664901.111	800.62	
FA-78-T8 SB	1170166.618	664903.124	800.43	
FA-78-T9 SWB	1170106.375	664935.474	800.31	
FA-78-T9 NEB	1170141.675	664970.371	800.26	
FA-78-T10 EB	1169760.675	664938.070	769.74	
FA-78-T10 WB	1169808.401	664912.631	776.70	
FA-79-SB01	1175343.372	672915.948	805.61	
FA-79-SS01	1175299.343	672903.885	808.05	
FA-79-SS02	1175360.984	673086.323	811.40	
FA-79-SS03	1175643.188	673063.416	820.16	
FA-79-SS04	1175684.444	672771.945	811.79	
FA-79-SS05	1175415.165	672785.380	809.38	
FA-79-LF2-D02	1175444.886	672890.750		
FA-79-LF2-G01	1175440.330	672890.593	807.53	809.59
FA-79-LF2-G02	1175137.161	672752.466	791.66	793.89
FA-79-LF2-G03	1175215.243	673113.918	794.53	796.88
FA-79-LF2-W02	1175444.886	672890.750		
FA-79-T79-10 EB	1175783.727	672820.523	810.50	
FA-79-T79-10 WB	1175769.360	672739.313	807.83	
FA-79-T79-11 NB	1175805.646	672775.491	809.27	
FA-79-T79-1 FB	1175514.870	672997.176	809.14	
FA-79-T79-1 NB	1175534.173	672983.619	809.45	
FA-79-T79-1 SB	1175510.642	672999.685	809.86	
FA-79-T79-2 SWB	1175543.937	672810.938	806.62	

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Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FA-79-T79-2 NWB-FB	1175604.392	672806.082	807.45	
FA-79-T79-3 FB	1175434.216	672683.954	799.29	
FA-79-T79-3 NEB	1175443.785	672738.859	800.65	
FA-79-T79-3 SWB	1175431.643	672671.551	799.81	
FA-79-T79-4 NWB	1175663.592	673012.755	813.53	
FA-79-T79-4 NWFB	1175663.316	673034.736	813.63	
FA-79-T79-4 SEB	1175662.805	673051.973	814.28	
FA-79-T79-4A NWEND	1175699.366	672921.416		
FA-79-T79-4A SEEND	1175629.284	672952.361		
FA-79-T79-5 NNEB	1175783.761	673072.579	822.38	
FA-79-T79-5 SSWB	1175754.756	673071.011	820.56	
FA-79-T79-6 FB	1175584.316	673181.987	808.18	
FA-79-T79-6 NWB	1175600.845	673141.164	809.99	
FA-79-T79-6 SEB	1175579.479	673201.879	806.82	
FA-79-T79-7 NB	1175382.403	672973.553	806.43	
FA-79-T79-7 SB	1175338.425	672991.608	805.07	
FA-79-T79-8 NB	1175143.037	672769.062	790.08	
FA-79-T79-8 SB	1175099.112	672801.052	789.28	
FA-79-T79-9 NB	1175748.944	672773.939	807.44	
FA-79-T79-9 SB	1175699.953	672776.788	807.64	
FA-80-SB01	1180509.861	669510.830	738.51	
FA-80-SB02	1180595.294	669028.396	739.97	
FA-80-SB03	1180142.045	669338.868	738.72	
FA-80-SB04	1180259.654	668816.457	738.09	
FA-80-SB05	1179877.591	668992.140	741.72	
FA-80-GS80-SB01	1179685.370	669312.120	743.55	
FA-80-GS80-SB02	1180864.910	669041.150	745.29	
FA-80-GS80-SB03	1180266.380	668279.700	748.07	
FA-80-MW-1	1150038.900	656165.907		
FA-80-OLF-D01	1178287.844	668167.805		
FA-80-OLF-D02	1180039.449	667665.836		
FA-80-OLF-D03	1180647.791	668719.563		
FA-80-OLF-G01	1180313.274	668699.371	742.28	743.67
FA-80-OLF-G02	1179623.476	668753.919	742.65	744.28
FA-80-OLF-G03	1180616.595	669736.520	737.25	739.92
FA-80-OLF-G04	1180741.704	669120.986	744.96	747.49
FA-80-OLF-G05	1179942.202	668429.360	737.73	740.25
FA-80-OLF-G06	1180678.060	668744.930	747.73	749.93
FA-80-OLF-G07	1180152.139	668518.710	739.01	741.42
FA-80-OLF-G08	1179949.383	668446.112	737.64	739.34
FA-80-OLF-G09	1180821.119	669510.218	738.96	741.20
FA-80-OLF-G10	1179341.576	668705.206	746.62	748.53
FA-80-OLF-G11	1179329.565	669337.882	744.61	747.11
FA-80-OLF-G12	1180514.400	668522.680	743.53	743.88
FA-80-OLF-G13	1180337.274	669644.115	736.94	739.49
FA-80-OLF-G15	1181196.960	669312.803	732.92	735.45

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Fill Areas and Landfills
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Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FA-80-OLF-G16	1180964.310	668872.930	735.31	737.80
FA-80-OLF-G17	1180313.126	668712.495	738.46	740.11
FA-80-OLF-G18	1179782.128	668210.937	740.83	740.41
FA-80-OLF-G19	1180126.118	668362.304	742.30	742.79
FA-80-OLF-S11	1179400.594	669309.277		
FA-80-OLF-S13	1180348.337	669661.289		
FA-80-OLF-S16	1180948.677	668811.571		
FA-80-OLF-S17	1180316.556	668699.408		
FA-80-OLF-S20	1180050.614	668709.526		
FA-80-OLF-S21	1179788.763	669228.345		
FA-80-OLF-S22	1180291.485	669174.963		
FA-80-OLF-S23	1180646.447	669418.538		
FA-80-OLF-W01	1178287.844	668167.805		
FA-80-OLF-W02	1180313.274	668699.371		
FA-80-OLF-W03	1180316.482	668705.970		
FA-80-OLF-W04	1180316.482	668705.970		
FA-80-OLF-W05	1180316.556	668699.408		
FA-80-T1 NEB	1180432.207	669203.136	741.75	
FA-80-T1 SEB	1180449.008	669261.047	740.19	
FA-80-T2 NWB	1180106.609	669012.249	739.54	
FA-80-T2 SEB	1180033.365	669050.733	739.49	
FA-80-T3 FB	1179433.783	669196.261	747.79	
FA-80-T3 NEB	1179523.832	669213.342	745.05	
FA-80-T3 SEB	1179420.541	669184.183	747.20	
FA-80-T4 FB	1179622.537	668836.745	741.12	
FA-80-T4 NEB	1179693.277	668882.408	741.16	
FA-80-T4 SEB	1179609.629	668825.730	741.40	
FA-80-T5 FB	1179750.386	668444.616	738.87	
FA-80-T5 NEB	1179833.423	668502.976	740.37	
FA-80-T5 SEB	1179742.148	668432.705	738.90	
230-POSTHOLE1	1175532.410	673538.130		
FA-230-SB01	1175956.272	673787.386	829.11	
PPMP-230-DEP01	1175747.638	673801.745	810.82	
PPMP-230-DEP02	1176020.650	673863.060	816.12	
PPMP-230-DEP03	1176220.390	673879.841	822.12	
PPMP-230-GP01	1175663.522	673754.236	803.45	805.12
PPMP-230-GP02	1176089.466	673868.044	811.12	812.17
PPMP-230-GP03	1176188.642	673865.270	812.12	814.24
PPMP-230-GP04	1175756.423	673647.565	831.49	
PPMP-230-GP05	1175914.782	673670.268	832.96	
PPMP-230-GP06	1176025.236	673728.682	832.18	
PPMP-230-GP07	1176186.854	673739.000	829.40	
PPMP-230-SEP01	1175768.323	673786.812	812.09	
PPMP-230-SEP02	1176070.963	673847.504	818.23	
PPMP-230-SEP03	1176218.820	673823.114	823.04	
PPMP-230-SW/SD01	1175559.894	673717.351	804.16	

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Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
PPMP-230-SW/SD02	1176133.869	673891.864	816.10	
PPMP-230-SW/SD03	1176348.543	673891.932	820.31	
PPMP-230-T230-1 S	1176212.870	673744.270		
PPMP-230-T230-1 SE	1176206.660	673771.720		
PPMP-230-T230-1 NW	1175907.260	673635.270		
PPMP-230-T230-2 SE	1175891.800	673687.510		
PPMP-230-T230-3 NW	1175698.410	673557.160		
PPMP-230-T230-3 SE	1175664.350	673600.890		
PPMP-230-T230-4 N	1175615.130	673576.860		
PPMP-230-T230-4 S	1175583.920	673567.090		
PPMP-230-T230-5 S	1175571.880	673647.770		
PPMP-230-T230-5 N	117513.890	673639.040		
FTA-126-DEP01	1181454.361	672991.424	729.22	
FTA-126-DEP02	1181546.033	673129.423	727.95	
FTA-126-DEP03	1181587.446	673257.873	726.89	
FTA-126-GP01	1181535.960	673088.330	729.17	731.60
FTA-126-GP02	1181693.200	673212.310	727.68	730.03
FTA-126-GP03	1181455.110	673451.490	736.32	737.14
FTA-126-SW/SD01	1181557.203	673074.618	723.34	
FTA-126-SW/SD02	1181601.925	673137.950	723.32	
FTA-126-SW/SD03	1181684.855	673199.224	723.85	
FA-227-SB01	1180817.050	673492.070	753.85	
FA-227-SB02	1180872.823	673287.567	752.55	
FA-227-SB03	1181329.527	673909.367	751.55	
FA-227-SB04	1181239.767	673485.629	758.82	
FA-227-SB05	1181430.477	673200.637	752.08	
PPMP-227-DEP01	1181363.740	672718.060	825.72	
PPMP-227-DEP02	1181562.550	672662.840	826.75	
PPMP-227-DEP03	1181688.190	672659.280	825.81	
PPMP-227-DEP04	1181444.360	674004.940	738.02	
PPMP-227-GP01	1180764.490	673161.150	751.83	753.71
PPMP-227-GP02	1180902.490	672542.590	747.55	749.53
PPMP-227-GP03	1181164.450	672599.450	748.60	751.43
PPMP-227-GP04	1181059.820	672933.440	749.45	751.58
PPMP-227-GP05	1181317.030	672953.270	747.10	750.36
PPMP-227-GP06	1181473.900	673323.990	729.15	731.30
PPMP-227-GP06(SS)	1181384.290	673372.070	738.69	
PPMP-227-GP07	1181247.240	673514.610	759.08	760.08
PPMP-227-GP08	1181422.850	673999.480	738.46	741.29
PPMP-227-GP09	1181345.050	674153.600	749.90	751.31
PPMP-227-GP10	1181047.790	674343.490	760.89	763.19
PPMP-227-GP11	1180995.290	673728.390	758.76	759.38
PPMP-227-GP12	1181111.250	673465.860	759.11	762.00
PPMP-227-GP13	1180894.930	673377.150	753.79	755.50
PPMP-227-GP14	1180757.510	673786.020	753.78	
PPMP-227-GP15	1180769.570	673942.910	754.66	

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Fill Areas and Landfills
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Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
PPMP-227-GP16	1180839.280	672116.090	743.43	
PPMP-227-SW/SD01	1181426.120	672894.310	724.86	
PPMP-227-SW/SD02	1181342.660	672496.050	817.55	
PPMP-227-SW/SD03	1181294.890	672305.080	832.93	
PPMP-227-SW/SD04	1181337.050	672241.880	828.32	
PPMP-227-SW/SD05	1181444.360	674004.940	738.02	
PPMP-227-T1 FB	1181433.666	673913.197	739.42	
PPMP-227-T1 NB	1181453.192	673899.307	737.45	
PPMP-227-T1 SB	1181412.413	673926.114	742.12	
PPMP-227-T10 EB	1180906.597	673165.547	752.57	
PPMP-227-T10 FB	1180919.504	673100.070	752.77	
PPMP-227-T10 WB	1180922.785	673086.367	752.80	
PPMP-227-T11 NB	1180919.447	673376.095	753.18	
PPMP-227-T11 SB	1180868.491	673342.488	752.84	
PPMP-227-T12 EB	1180890.151	673589.754	756.61	
PPMP-227-T12 FB	1180889.727	673577.676	756.31	
PPMP-227-T12 WB	1180891.162	673519.951	753.47	
PPMP-227-T13 EB	1180795.852	673441.394	752.33	
PPMP-227-T13 WB	1180792.443	673387.226	753.36	
PPMP-227-T14 NB	1180762.152	673343.191	753.50	
PPMP-227-T14 SB	1180628.003	673345.464	755.52	
PPMP-227-T15 NB	1180922.334	673478.179	752.98	
PPMP-227-T15 SB	1180874.691	673488.682	753.89	
PPMP-227-T16 NB	1180860.477	673481.687	753.60	
PPMP-227-T16 SB	1180816.501	673456.580	753.25	
PPMP-227-T17 EB	1181027.158	673195.755	752.64	
PPMP-227-T17 FB	1181036.046	673182.390	752.08	
PPMP-227-T17 WB	1181054.609	673155.375	753.86	
PPMP-227-T2 EB	1181372.178	673837.179	739.77	
PPMP-227-T2 FB	1181368.302	673827.555	738.85	
PPMP-227-T2 WB	1181349.870	673786.068	744.11	
PPMP-227-T3 NB	1181395.833	674053.175	749.06	
PPMP-227-T3 SB	1181372.869	673994.731	750.28	
PPMP-227-T4 FB	1181294.865	673943.063	753.66	
PPMP-227-T4 NB	1181341.088	673944.269	748.14	
PPMP-227-T4 SB	1181281.045	673943.163	755.22	
PPMP-227-T5 EB	1181388.958	673562.953	755.96	
PPMP-227-T5 FB	1181377.807	673542.064	756.87	
PPMP-227-T5 WB	1181366.508	673518.753	759.60	
PPMP-227-T6 NB	1181285.907	673484.496	759.02	
PPMP-227-T6 SB	1181233.458	673498.146	759.40	
PPMP-227-T7 FB	1181373.552	673302.521	756.14	
PPMP-227-T7 NB	1181393.373	673318.337	754.82	
PPMP-227-T7 SB	1181354.493	673287.433	756.12	
PPMP-227-T8 FB	1181188.279	673470.483	760.01	
PPMP-227-T8 NB	1181212.852	673470.605	759.82	

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Fort McClellan, Calhoun County, Alabama

Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
PPMP-227-T8 SB	1181153.278	673469.464	757.24	
PPMP-227-T9 EB	1180798.270	673350.923	753.09	
PPMP-227-T9 WB	1180793.506	673288.260	752.87	
FA-229-SB01	1181018.590	670325.680	745.52	
FA-229-SB02	1181114.857	670284.982	742.81	
PPMP-229-DEP01	1181201.780	670422.190	726.20	
PPMP-229-DEP02	1180961.730	670511.310	747.86	
PPMP-229-GP01	1181164.460	670201.800	740.70	740.46
PPMP-229-GP02	1181036.040	670414.100	741.52	742.55
PPMP-229-GP03	1180875.890	670440.220	744.30	746.82
PPMP-229-GP04	1180897.400	669877.200	743.79	745.50
PPMP-229-GP05	1181101.560	670064.510	743.91	746.59
PPMP-229-GP06	1180978.810	670382.480	744.19	
PPMP-229-GP07	1181227.660	669868.170	741.37	744.04
PPMP-229-SW/SD01	1180984.200	670545.370	738.29	
PPMP-229-SW/SD02	1181218.200	670483.090	732.12	
PPMP-229-SW/SD03	1180622.450	669913.770	731.96	
PPMP-229-T229-1 SFB	1181337.224	669971.828	733.01	
PPMP-229-T229-2 EB	1181368.610	670084.572	731.01	
PPMP-229-T229-2 FB	1181377.420	670041.927	733.51	
PPMP-229-T229-2 WB	1181381.014	670026.226	734.50	
PPMP-229-T229-3-1 FB	1181392.004	669974.986	736.76	
PPMP-229-T229-3 NB	1181451.402	669976.268	739.86	
PPMP-229-T229-4 EB	1181141.117	669930.585	744.41	
PPMP-229-T229-4 WB	1181144.818	669879.426	745.26	
PPMP-229-T229-5 EB	1181107.690	670333.666	743.32	
PPMP-229-T229-5 FB	1181094.532	670298.543	743.37	
PPMP-229-T229-5 WB	1181090.563	670282.270	744.65	
PPMP-229-T229-6 EB	1180988.239	669982.367	748.19	
PPMP-229-T229-6 WB	1180993.990	669932.251	746.46	
PPMP-229-T229-7 NWB	1180921.767	670161.769	746.76	
PPMP-229-T229-7 SWB	1180876.260	670142.581	745.24	
PPMP-229-T229-8 NB	1180912.148	670279.153	755.63	
PPMP-229-T229-8 SB	1180840.907	670286.463	743.72	
PPMP-229-T229-9 EB	1180893.968	670451.002	743.95	
PPMP-229-T229-9 FB	1180892.446	670423.238	745.74	
PPMP-229-T229-9 WB	1180891.578	670401.056	746.38	
PPMP-229-T229-10 EB	1181033.194	669786.591	748.17	
PPMP-229-T229-10 FB	1181030.144	669738.599	744.48	
PPMP-229-T229-10 WB	1181028.773	669730.292	744.40	
PPMP-229-T229-11 NWB	1180971.423	670126.707	745.87	
PPMP-229-T229-11 SEB	1180922.469	670152.429	746.99	
PPMP-229-T229-12 NEB	1181151.319	670145.494	740.35	
PPMP-229-T229-12 SWB	1181132.295	670118.502	741.19	
PPMP-229-T229-13 EB	1181035.874	670310.147	745.71	
PPMP-229-T229-13 WB	1181018.629	670263.929	746.47	

Appendix J

Survey Coordinates
Fill Areas and Landfills
Fort McClellan, Calhoun County, Alabama

Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FA-231-SB01	1180028.374	675197.576	775.83	
FA-231-SB02	1180130.353	675058.677	768.38	
PPMP-231-DEP01	1180411.320	675517.320	769.27	
PPMP-231-DEP02	1180061.790	675006.800	773.46	
PPMP-231-DEP03	1180333.280	675593.780	771.43	
PPMP-231-GP01	1180250.120	674902.700	765.60	767.41
PPMP-231-GP01(SS)	1180282.320	674959.550	769.94	
PPMP-231-GP02	1180468.270	675290.820	770.57	770.91
PPMP-231-GP03	1180105.560	674934.890	769.30	770.71
PPMP-231-GP04	1180052.350	674891.440	770.57	
PPMP-231-GP05	1179917.190	674713.390	770.96	
PPMP-231-GP06	1180175.940	674742.380	763.60	
PPMP-231-GP07	1180395.160	675451.720	770.17	
PPMP-231-GP08	1180199.200	675024.840	767.75	
PPMP-231-GP09	1180171.090	675149.710	768.18	
PPMP-231-GP10	1180174.570	674925.060	767.56	
PPMP-231-GP11	1179996.190	674959.130	773.79	774.08
PPMP-231-SEP01	1180021.230	675009.170	773.46	
PPMP-231-SEP02	1180333.280	675593.780	771.43	
PPMP-231-SW/SD01	1180143.430	675460.910	773.24	
PPMP-231-T231-1 N	1180201.960	675291.870		
PPMP-231-T231-1 S	1180155.810	675316.720		
PPMP-231-T231-2 NE	1180357.420	675423.420		
PPMP-231-T231-2 SW	1180325.270	675398.770		
PPMP-231-T231-3 NW	1180299.680	674948.000		
PPMP-231-T231-3 SE	1180244.250	674975.230		
PPMP-231-T231-4 W	1179864.130	674713.570		
PPMP-231-T231-4 E	1179856.730	674779.740		
PPMP-231-T231-5 NE	1180006.970	674861.020		
PPMP-231-T231-5 SW	1179991.090	674813.130		
PPMP-231-T231-6 W	1180026.670	674899.170		
PPMP-231-T231-6 E	1180027.270	674962.260		
PPMP-233-DEP01	1164544.871	664752.922	825.98	
PPMP-233-GP01	1164871.325	664320.673		
PPMP-233-GP02	1165140.906	664272.406		
PPMP-233-GP03	1165091.225	664302.435	826.00	828.31
PPMP-233-GP04	1165184.789	664160.214	827.06	829.54
PPMP-233-GP05	1164930.108	664258.950	830.68	833.23
PPMP-233-GP06	1164777.030	664175.112	841.05	843.51
PMP-233-T233-1A SE	1164997.990	664351.010		
PMP-233-T233-1A NW	1165061.340	664303.070		
PMP-233-T233-1B W	1165037.830	664303.190		
PPMP-233-T233-1B E	1165044.330	664342.130		
FA-82-SB01	1170530.558	677678.865	988.86	
FA-82-SB02	1170577.495	678129.804	973.60	
FA-82-SB03	1171067.871	678010.109	1041.71	

Appendix J

Survey Coordinates
Fill Areas and Landfills
Fort McClellan, Calhoun County, Alabama

Survey Location	Northing	Easting	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)
FTA-82-DEP01	1170534.800	677375.740	910.87	
FTA-82-DEP02	1170213.080	677764.340	945.12	
FTA-82-DEP03	1170672.100	678142.980	1081.37	
FTA-82-DEP04	1171077.140	678278.920	1012.81	
FTA-82-DEP05	1170548.506	678079.490	975.74	
FTA-82-DEP06	1170589.403	678077.758	975.28	
FTA-82-MW01	1170705.270	677170.470	907.26	909.76
FTA-82-MW02	1170193.680	677552.220	932.10	934.59
FTA-82-MW03	1170575.250	678209.940	973.66	976.23
FTA-82-MW04	1171081.087	678253.195	1012.81	1015.38
FTA-82-MW05	1171236.496	677806.441	1049.14	1051.46
FTA-82-MW06	1171087.915	677795.621	1064.19	1067.13
FTA-82-MW07	1170850.959	677755.898	1035.73	1038.51
FTA-82-MW08	1170891.420	677221.990	914.48	915.86
FTA-82-SW/SD01	1170519.660	677348.640	1014.95	
FTA-82-SW/SD02	1170279.480	677394.710	917.97	
FTA-82-SW/SD03	1170899.895	678125.894	992.87	
FTA-82-SW/SD04	1171256.804	678114.779	1034.11	
FTA-82-SW/SD06	1170887.502	677869.460	1039.44	

Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983 (NAD83).

Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

ft msl - Feet above mean sea level.

APPENDIX K

VARIANCES

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	LANDFILL2PARCEL79MAR00.VR1
Linked w/NC No:	x
Date of Issue:	3/30/00
	Page _1 of 1__
Project Name: **Fort McClellan** - CK09	Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

LANDFILL 2 PARCEL 79(6):

The Final Site-Specific Field Sampling Plan proposed geophysical surveys covering an area approximately 7 acres. The geophysical grid was expanded at the parcel so that additional data could be collected.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 3-30-00

II. Justification for Variance:

The geophysical grid was expanded approximately 3 acres so that additional data could be collected to delineate the extent of the fill area. Expanding the grid allowed the geophysics crew to more accurately delineate the extent of anomalies and the fill area so that proposed trenches and soil boring locations could be determined and samples collected for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

Signatures

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr 4-19-00 Date

Approved by: Date

Project Manager Approval: Jeanne Yacoub 4/20/00 Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL230EECAMAR00.VR1
Linked w/NC No:	
Date of Issue:	3/30/00
Page _1 of 1__	

Project Name: **Fort McClellan** - CK09

Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA NORTH OF LANDFILL 2 PARCEL 230(7):

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-230-SB01 in the east central section of the Fill Area to determine the vertical extent of the fill, the cause of the anomaly, and provide data to characterize the fill material. Soil boring location FA-230-SB01 was moved approximately 27 feet southeast of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 3-30-00

II. Justification for Variance:

Unable to determine the vertical extent of the fill and characterize the fill material at proposed soil boring location FA-230-SB01 bec[illegible] potential unexploded ordnance (uxo) obstruction was encountered at approximately 2 feet below ground surface (bgs). Three attem[illegible] were made to drill at the proposed soil boring location FA-230-SB01, but all attempts were unsuccessful. Therefore, the IT Site Manager made a decision to move soil boring location FA-230-SB01 approximately 27 feet southeast of its proposed location and fill material was successfully encountered at ground surface to approximately fifteen feet bgs. Relocating the soil boring provided 1) an accurate characterization of the fill material 2) the vertical extent of the fill was determined and 3) soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

Signatures

Requested by: Jeffrey Tarr, PG - IT Site Manager 4-19-00
Date

Approved by:
Date

Project Manager Approval: Jeanne Yacoub 4/20/00
Date

QA Approval:Randy McBride
Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL230FEB99.VR1

Linked w/NC No: X

Date of Issue: 2\28\99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA NORTH OF LANDFILL 2 PARCEL 230(7)

Proposed seep water sample locations PPMP-230-SEP01 and PPMP-230-SEP02 were relocated because the proposed locations shown on Figure 4-1 of the Site-Specific Field Sampling Plan were dry. Therefore, the sample locations were moved so that seep water could be collected.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 2-28-99

II. Justification For Variance:

A seep water pool was present approximately 200 feet north-northeast of proposed seep water location PPMP-230-SEP01. Therefore, the seep water sample was collected at that location. A seep water pool was present approximately 60 feet north-northeast of proposed seep water location PPMP-230-SEP02. Therefore, the seep water sample was collected at that location. Both seep water locations PPMP-230-SEP01 and PPMP-230-SEP02 shown on Figure 4-1 of the Site-Specific Field Sampling Plan were dry. Therefore, the two seep water sample locations were moved so that seep water samples could be collected.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area North of Landfill 2 Parcel 230(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 3/29/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 5/5/99 Date

QA Approval:Randy McBride 3/30/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL126MARCH99.VR1

Linked w/NC No: x

Date of Issue: 3\31\99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I. Description: (by the person identifying the change)

POST GARBAGE DUMP NORTH OF REILLY AIRFIELD PARCEL 126(7)

Subsurface soil sample FTA-126-GP01 was collected approximately 25 feet south of temporary well FTA-126-GP01.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-31-99

II. Justification For Variance:

The site-specific field sampling plan proposed a surface soil sample, subsurface soil sample, and groundwater sample at sample location FTA-126-GP01. Temporary well FTA-126-GP01 is located in a topographical low area with a water table approximately one foot below land surface (bls). Subsurface soil samples were proposed at a depth greater than one foot bls. The soil sample collected below one foot at sample location FTA-126-GP01 was saturated with groundwater. Soil saturated with groundwater is more representative of groundwater contamination. Therefore, the site manager made a decision to collect a subsurface soil sample at a higher topographical area, approximately 25 feet south of temporary well FTA-126-GP01 where the water table was approximately four feet bls. The subsurface soil sample was successfully collected above the water table from two feet to three feet bls. The subsurface soil sample will more accurately determine the presence or absence of soil contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Post Garbage Dump North of Reilly Airfield, Parcel 126(7), October 1998.
Final Installation-Wide Sampling and Analysis Plan, August 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 4/30/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 6/21/99 Date

QA Approval: Randy McBride 5/30/99

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL126MARCH99.VR2

Linked w/NC No: X

Date of Issue: 3\31\99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I. Description: (by the person identifying the change)

POST GARBAGE DUMP NORTH OF REILLY AIRFIELD PARCEL 126(7)

Subsurface soil sample FTA-126-GP02 was collected approximately 60 feet south of temporary well FTA-126-GP02.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-31-99

II. Justification For Variance:

The site-specific field sampling plan proposed a surface soil sample, subsurface soil sample, and groundwater sample at sample location FTA-126-GP02. Temporary well FTA-126-GP02 is located in a topographical low area with a water table approximately one foot below land surface (bls). Subsurface soil samples were proposed at a depth greater than one foot bls. The soil sample collected below one foot at sample location FTA-126-GP02 was saturated with groundwater. Soil saturated with groundwater is more representative of groundwater contamination. Therefore, the site manager made a decision to collect a subsurface soil sample at a higher topographical area, approximately 60 feet south of temporary well FTA-126-GP02 where the water table was approximately four feet bls. The subsurface soil sample was successfully collected above the water table from two feet to three feet bls. The subsurface soil sample will more accurately determine the presence or absence of soil contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Post Garbage Dump North of Reilly Airfield, Parcel 126(7), October 1998.
Final Installation-Wide Sampling and Analysis Plan, August 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager — Jeffrey L. Tarr — 4/30/99 Date

Approved by: Ellis C. Pope — 11/5/99 Date

Project Manager Approval: Jeanne Yacoub — 6/21/99 Date

QA Approval: Randy McBride — 4/30/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL227MARCH99.VR1

Linked w/NC No: x

Date of Issue: 3\31\99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I.Description: (by the person identifying the change)

Fill Area East End of Reilly Airfield Parcel 227(7)

Subsurface soil sample PPMP-227-GP06 was collected approximately 100 feet south of temporary well PPMP-227-GP06.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-31-99

II. Justification For Variance:

The site-specific field sampling plan proposed a subsurface soil sample and groundwater sample at sample location PPMP-227-GP06. Temporary well PPMP-227-GP06 is located in a topographical low area with a water table approximately one foot below land surface (bls). Subsurface soil samples were proposed at a depth greater than one foot bls. The soil sample collected below one foot at sample location PPMP-227-GP06 was saturated with groundwater. Soil saturated with groundwater is representative of groundwater contamination. Therefore, the site manager made a decision to collect a subsurface soil sample a a higher topographical area, approximately 100 feet south of temporary well PPMP-227-GP06 where the water table was approximately four feet bls. The subsurface soil sample was successfully collected above the water table from 1.5 feet to 2.5 feet bls. The subsurface soil sample will more accurately determine the presence or absence of soil contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area East End of Reilly Airfield, Parcel 227(7), December 1998.
Final Installation-Wide Sampling and Analysis Plan, August 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

Signatures

Requested by: Jeffrey Tarr, PG - IT Site Manager 4/30/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 6/21/99 Date

QA Approval:Randy McBride 4/30/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL227EECAMAR00.VR2
Linked w/NC No:	X
Date of Issue:	3/30/00
	Page _1 of 1__

Project Name: **Fort McClellan** - CK09	Project Number: **796886**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA EAST END REILLY AIRFIELD PARCEL 227(7):

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-227-SB01 in the southern section of the Fill Area near Reilly Airfield to determine the vertical extent of the fill, the cause of the anomaly at that location, and provide data to characterize the fill material. Soil boring location FA-227-SB01 was moved approximately 100 feet north \ northeast of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 3-30-00

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-227-SB01 in the southern section of the Fill Area. Fill material was not present at the proposed location during drilling and split-spoon soil sampling procedures. Therefore, soil boring location FA-227-SB01 was moved approximately 100 feet north \ northeast of its proposed location and fill material was successfully encountered at approximately two feet below ground surface. Relocating the soil boring provided 1) an accurate characterization of the fill material 2) the vertical extent of the fill was accurately determined and 3) soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr 4-19-00 Date

Approved by: Date

Project Manager Approval: Jeanne Yacoub 4/26/00 Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL227EECAMAR00.VR1
Linked w/NC No:	
Date of Issue:	3/30/00
	Page _1 of 1__
Project Name: **Fort McClellan** - CK09	Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA EAST END REILLY AIRFIELD PARCEL 227(7):

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-227-SB04 in the north central section of the Fill Area to determine the vertical extent of the fill, the cause of the anomaly at that location, and provide data to characterize the fill material. Soil boring location FA-227-SB04 was moved approximately 75 feet northwest of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 3-30-00

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-227-SB04 in the north central section of the Fill Area. Fill material was not present at proposed location during drilling and split-spoon soil sampling procedures. Therefore, soil boring location FA-227-SB04 was moved approximately 75 feet northwest of its proposed location and fill material was successfully encountered at approximately one foot below ground surface. Relocating the soil boring provided 1) an accurate characterization of the fill material 2) the vertical extent of the fill was accurately determined and 3) soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 4-19-00
Jeffrey Tarr
Date

Approved by:
Date

Project Manager Approval: Jeanne Yacoub 4/20/00
Date

QA Approval:Randy McBride
Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL227MARCH99.VR2
Linked w/NC No:	x
Date of Issue:	3/31/99
	Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: 774645

-Variance Report -

I.Description: (by the person identifying the change)

Fill Area East End of Reilly Airfield Parcel 227(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed a surface water and sediment sample at sample location PPMP-227-SW\SD05. Surface water was not present at this location at the initial time of sample collection. At that time, a depositional sample (PPMP-227-DEP04) was collected for all parameters except nitroexplosives. On a subsequent visit to collect the nitroexplosives sample, surface water was present, and a surface water and sediment sample were collected for nitroexplosives analyses only at sample location PPMP-227-SW/SD05. The surface water sample was not run for other parameters.

Identified by: Jeffrey Tarr, PG – IT Site Manager

Date: 3-31-99

II. Justification for Variance:

Surface water was not present at the location at the initial time of sample collection. Because surface water was not present, a depositional soil sample was collected to determine the presence or absence of contamination. On a subsequent visit to collect a nitroexplosives sample, surface water was present and both a surface water sample and sediment sample was collected and run for nitroexplosives. This variance did not alter the scope or intent of investigation.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area East End of Reilly Airfield, Parcel 227(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 4/30/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 6/21/99 Date

QA Approval: Randy McBride 4/30/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL227JAN99.VR1

Linked w/NC No:

Date of Issue: 1/30/99

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA EAST END OF REILLY AIRFIELD PARCEL 227(7);

The Final Site-Specific Field Sampling Plan proposed geophysical surveys covering an area approximately 22 acres. The geophysical gri was expanded at the parcel so that additional data could be collected.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 1-30-99

II. Justification for Variance:

The geophysical grid was expanded approximately 10 acres so that additional data could be collected to delineate the extent of the fill area. Expanding the grid allowed the geophysics crew to more accurately delineate the extent of anomalies and the fill area so that proposed monitoring wells and sample locations could be determined and samples collected for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area East of Reilly Airfield Parcel 227(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 2/19/99 Date

Approved by: Ellis C Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 3/18/99 Date

QA Approval: Randy McBride 2/26/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL229EECAMAR00.VR1
Linked w/NC No:	x
Date of Issue:	3/30/00
	Page _1 of 1__
Project Name: **Fort McClellan** - CK09	Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA NORTHWEST OF REILLY AIRFIELD PARCEL 229(7):

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-229-SB01 in the southeastern section of the Fill Area to determine the vertical extent of the fill and provide data to characterize the fill material. Soil boring location FA-229-SB01 was moved approximately 30 feet west \ northwest of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 3-30-00

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-229-SB01 in the southeastern section of the Fill Area. Fill material was not present at the proposed location during drilling and split-spoon soil sampling procedures. Therefore, soil boring location FA-229-SB01 was moved approximately 30 feet west \ northwest of its proposed location and fill material was successfully encountered at approximately two feet below ground surface. Relocating the soil boring provided 1) an accurate characterization of the fill material 2) the vertical extent of the fill was accurately determined and 3) soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 4-19-00 Date

Approved by: Date

Project Manager Approval: Jeanne Yacoub 4/20/00 Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: RANGE30JAN99.VR2

Linked w/NC No: x

Date of Issue: 1/30/99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I. Description: (by the person identifying the change)

FILL AREA AT RANGE 30 PARCEL 231(7):

Sample location PPMP-231-GP01 was moved approximately 70 feet southwest of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 1-30-99

II. Justification for Variance:

Sample location PPMP-231-GP01 was moved approximately 70 feet southwest of its proposed location because fill material and construction debris were encountered during drilling operations. Therefore, the temporary well was offset and successfully installed approximately 70 feet southwest. A decision was made by the project geologist to move the temporary well away from the subsurface fill material and construction debris and into natural subsurface soil so that the integrity of the well screen and filter pack was not jeopardized.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area at Range 30, Parcel 231(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 2/19/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 3/18/9 Date

QA Approval: 2/28/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: RANGE30JAN99.VR1

Linked w/NC No: x

Date of Issue: 1\27\99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA AT RANGE 30 PARCEL 231(7):

Sample location FTA-151-GP07 was originally proposed at the GSA Area and Surrounding Warehouses Parcel 151(7). However, sample location FTA-151-GP07 was not installed due to underground utilities, location of Building 256 foundation, and proximity of railroad tracks. The IT Site Manager, Army Corps Geologist, and IT Technical Lead discussed the possibility of relocating sample location FTA-151-GP07. Consensus was that moving sample location FTA-151-GP07 would not justify the rational and this sample location could be used at a separate parcel. Therefore, the sample location was advanced at Range 30 Parcel 231(7).

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 1-27-99

II. Justification For Variance:

The IT Site Manager made a decision to advance one additional sample location PPMP-231-GP11 at Range 30 Parcel 231(7). The sample location was advanced next to several corroded drums partially exposed at land surface, adjacent to a dirt access road. Sample location PPMP-231-GP11 was not proposed in the Final Site-Specific Field Sampling Plan. Sample location PPMP-231-GP11 will more accurately determine the presence or absence of contamination at the site.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, GSA Area and Surrounding Warehouses, Parcel 151(7), August 1998.
Final Site-Specific Field Sampling Plan, Fill Area at Range 30, Parcel 231(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 2/19/99 Date

Approved by: Ellis A Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 3/18/99 Date

QA Approval: 2/26/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL231EECAMAR00.VR1

Linked w/NC No:

Date of Issue: 3/30/00

Project Name: **Fort McClellan** - CK09

Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA AT RANGE 30 PARCEL 231(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-231-SB01 in the eastern section of the Fill Area to determine the vertical extent of the fill and provide data to characterize the fill material. Soil boring location FA-231-SB01 was moved approximately 50 feet north of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-30-00

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-231-SB01 in the eastern section of the Fill Area. Fill material was not present at the proposed location during drilling and split-spoon soil sampling procedures. Therefore, soil boring location FA-231-SB01 was moved approximately 50 feet north of its proposed location and fill material was successfully encountered at ground surface to approximately four feet below ground surface. Relocating the soil boring provided an accurate characterization of the fill material, the vertical extent of the fill was determined, and soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:

1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

IV. - Signatures

Requested by: Jeffrey Tarr, PG - IT Site Manager 4/19/00 Date

Approved by: Date

Project Manager Approval: Jeanne Yacoub 4/20/00 Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL231EECAMAR00.VR2
Linked w/NC No:	x
Date of Issue:	3/30/00
Page _1 of 1__	

Project Name: **Fort McClellan** - CK09

Project Number: **796886.01030300**

-Variance Report -

I.Description: (by the person identifying the change)

FILL AREA AT RANGE 30 PARCEL 231(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-231-SB02 in the northern section of the Fill Area to determine the vertical extent of the fill and provide data to characterize the fill material. Soil boring location FA-231-SB02 was moved approximately 15 feet southeast of its proposed location.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-30-00

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-231-SB02 in the northern section of the Fill Area. Fill material was not present at the proposed location during drilling and split-spoon soil sampling procedures. Therefore, soil boring location FA-231-SB02 was moved approximately 15 feet southeast of its proposed location and fill material was successfully encountered at ground surface to approximately two feet below ground surface. Relocating the soil boring provided an accurate characterization of the fill material, the vertical extent of the fill was determined, and soil samples were successfully collected from the fill material for chemical analysis.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 4-19-00 Date

Approved by: Date

Project Manager Approval: Jeanne Yacoub 4/26/00 Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL231MARCH99.VR1
Linked w/NC No:	x
Date of Issue:	3/25/99

Page _1 of 1__

Project Name: **Fort McClellan** - CK05

Project Number: 774645

-Variance Report -

I.Description: (by the person identifying the change)

Fill Area at Range 30 Parcel 231(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed seep water samples at sample location PPMP-231-SEP02. Seep water was not collected at location PPMP-231-SEP02.

Identified by: Jeffrey Tarr, PG – IT Site Manager

Date: 3-25-99

II. Justification for Variance:

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed seep water samples at sample locations PPMP-231-SEP01 and PPMP-231-SEP02. Seep water was not collected at location PPMP-231-SEP02 because seep water was not present. Several attempts were made to collect a seep water sample at this location, but all attempts were unsuccessful. Therefore depositional soil sample PPMP-231-DEP02 was collected to determine the presence or absence of contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Fill Area at Range 30, Parcel 231(7), December 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr 4/30/99 Date

Approved by: Ellis C. Pope 11/5/99 Date

Project Manager Approval: Jeanne Yacoub 6/21/99 Date

QA Approval: Randy McBride 4/30/99 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	FILLAREAPARCEL233JAN01.VR3
Linked w/NC No:	x
Date of Issue:	01/24/01

Project Name: **Fort McClellan** – CK09

Project Number: 796886.01030300

-Variance Report -

I.Description: (by the person identifying the change)

Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed a geophysical survey to determine the location and extent of the fill area. The parcel reportedly covers approximately one acre, although the boundaries of the parcel are not clearly defined. The Engineering Evaluation \ Cost Analysis (EECA) Fill Area Definition Work Plan proposed four exploratory trenches to delineate the horizontal and vertical extent of the fill area. Based upon the results of the surface geophysical survey, only two exploratory trenches were dug at the fill area.

Identified by: Jeffrey Tarr, PG – IT Site Manager	Date: 11-03-00

II. Justification for Variance:

The FSSFSP proposed four exploratory trenches to determine the extent of the fill area. Geophysical data analysis indicated that the site contains neither buried metal nor evidence of any fill material. Isolated metallic drums and some scattered metallic debris are present on the ground surface. One area trending northwest-southeast was interpreted as an area of elevated conductivity. Therefore, a decision was made by the IT Technical Lead and IT Site Manager to trench parallel and perpendicular to the elevated conductivity area to determine 1) if fill material exists and 2) characterize the fill material if present. Fill material was not observed during trenching operations. This variance will not alter the scope or intent of the investigations at Parcel 233(7).

III. Applicable Document/Work Plan: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, FILL AREA WEST OF RANGE 19, PARCEL 233(7), DECEMBER 1998.
ENGINEERING EVALUATION / COST ANALYSIS FILL AREA DEFINITION WORK PLAN, PARCELS 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7) AND 82(7)

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 1-30-2001 Date

Approved by: 2/13/01 Date

Project Manager Approval: 2/2/01 Date

QA Approval: 2/9/01 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	FILLAREAPARCEL233JAN01.VR1
Linked w/NC No:	X
Date of Issue:	01/29/01

Project Name: **Fort McClellan** – CK09

Project Number: 796886.01030300

-Variance Report -

I.Description: (by the person identifying the change)

The Site Investigation (SI) for the Fill Area West of Iron Mountain Road, Parcel 233(7) proposed soil boring PPMP-233-GP05 in the central area of the parcel. Soil boring PPMP-233-GP05 was proposed at that location to determine the presence or absence of contamination. The Engineering Evaluation / Cost Analysis (EECA) Fill Area Definition Work Plan proposed soil boring FA-233-SB01 at the same approximate location. Soil boring FA-233-SB01 was proposed to characterize the fill material at the parcel. A decision was made to eliminate soil boring FA-233-SB01 during the EECA field investigation and collect additional soil samples during the field investigation conducted during the SI from soil boring PPMP-233-GP05.

Identified by: Jeffrey Tarr, PG – IT Site Manager

Date: 11-03-00

II. Justification for Variance:

The Fill Area West of Iron Mountain Road, Parcel 233(7) EECA Work Plan proposed soil boring location FA-233-SB01 in the centr area of the parcel to characterize fill material. The SI Work Plan proposed sample location PPMP-233-GP05 at the same approximate location. Identical laboratory analytical methods were proposed for both soil borings. However, nitroexplosives were included in the analytical methods for soil boring FA-233-SB01, but not for soil boring PPMP-233-GP05. Therefore, the IT Site Manager made a decision to collect additional soil during drilling and sampling activities at soil boring location PPMP-233-GP05 and nitroexplosives were added to the laboratory analysis. Soil boring FA-233-SB01 was not advanced because soil samples were collected from soil boring PPMP-233-GP05. This variance will not alter the scope or intent of the investigations at the Fill Area West of Iron Mountain Road.

III. Applicable Document/Work Plan: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, FILL AREA WEST OF RANGE 19, PARCEL 233(7), DECEMBER 1998.
FINAL ENGINEERING EVALUATION \ COST ANALYSIS FILL AREA DEFINITION WORK PLAN, PARCELS 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7) and 82(7).

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 1-30-01 Date

Approved by: 2/13/01 Date

Project Manager Approval: 2/2/01

QA Approval: 2/9/01 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	FILLAREAPARCEL233JAN01.VR2
Linked w/NC No:	x
Date of Issue:	01/29/01

Page _1 of 1__

Project Name: **Fort McClellan** – CK05

Project Number: 774645.15020300

-Variance Report -

I.Description: (by the person identifying the change)

Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed four groundwater samples for chemical analysis. Groundwater samples were not collected from three of the four monitoring wells installed at the site. Groundwater samples were not collected from monitoring wells PPMP-233-GP03, PPMP-233-GP05 and PPMP-233-GP06.

Identified by: Jeffrey Tarr, PG – IT Site Manager

Date: 11-03-00

II. Justification for Variance:

The FSSFSP proposed four groundwater samples for chemical analysis. During drilling and monitoring well installation activities, hollow-stem auger refusal was encountered at proposed monitoring well locations PPMP-233-GP03 and PPMP-233-GP05 and competent bedrock was encountered at proposed monitoring well location PPMP-233-GP06. Groundwater was encountered at each of the three well locations during drilling activities. During groundwater sampling activities, groundwater was not present. Several attempts have been made to collect a groundwater sample from each well, but all attempts have been unsuccessful because the three wells are dry.

III. Applicable Document/Work Plan: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, FILL AREA WEST OF RANGE 19, PARCEL 233(7), DECEMBER 1998.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 1-30-2001 Date

Approved by: 2/13/01 Date

Project Manager Approval: 2/2/01 Date

QA Approval: 2/9/01 Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No: PARCEL82MARCH99.VR1

Linked w/NC No:

Date of Issue: 3\8\99

Project Name: **Fort McClellan** - CK05

Project Number: **774645**

-Variance Report -

I.Description: (by the person identifying the change)

STUMP DUMP PARCEL 82(7):

The Site-Specific Field Sampling Plan proposed a surface water sample and sediment sample at sample location FTA-82-SW\SD05. Surface water and sediment were not collected at this location. A depositional soil sample FTA-82-DEP06 was collected at this location.

Identified by: Jeffrey Tarr, PG - IT Site Manager

Date: 3-8-99

II. Justification For Variance:

A surface water sample and sediment sample was proposed at sample location FTA-82-SW\SD05, but was not collected because surface water and sediment were not present in the surface depression area. Several attempts were made to collect surface water sample and sediment sample from the surface depression, but all attempts were unsuccessful. A depositional soil sample FTA-82-DEP06 was collected at this location to determine the presence or absence of contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Stump Dump Parcel 82(7), October1998.

Distribution List:

1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Date

Approved by: Jeanne Yacoub 6/21/99 Date

Project Manager Approval: Date

QA Approval:Randy McBride Date

INTERNATIONAL TECHNOLOGY CORPORATION

Variance No:	PARCEL82ECAJULY01.VR1
Linked w/NC No:	x
Date of Issue:	7/23/01
	Page _1 of 1__
Project Name: **Fort McClellan** - CK09	Project Number: **796886**

-Variance Report -

I.Description: (by the person identifying the change)

STUMP DUMP PARCEL 82(7):

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed soil boring location FA-82-SB01 in the southern section of the Stump Dump to determine the vertical extent of the fill area and provide data to characterize the fill material. Soil boring location FA-82-SB01 was advanced, however fill material was not encountered in the boring and no sample was submitted to the laboratory for chemical analysis.

Identified by: Jeffrey Tarr, PG - IT Site Manager	Date: 7-23-01

II. Justification for Variance:

The FSSFSP proposed soil boring location FA-82-SB01 in the southern section of the Stump Dump. Fill material was not present at the proposed location during hollow-stem auger drilling and split-spoon soil sampling procedures. The lithology at the Stump Dump is predominantly quartzite rock that is present as gravel, cobble and boulder-size material. Several attempts were made to drill through the quartzite rock and deeper into the ground surface, but all attempts were unsuccessful. Proposed soil boring location FA-82-SB01 was moved several times to determine if fill material was present. Both hollow-stem auger and split-spoon soil sample refusal were encountered at depths ranging from 1 foot below land surface (bls) to four and one half feet bls and fill material was not present. Several attempts were made to provide an accurate characterization of the fill material. However, fill material was not encountered and no sample was collected.

III. Applicable Document/Work Plan: (by the person identifying the change)

Engineering Evaluation \ Cost Analysis, Fill Area Definition Work Plan, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229(7), 126(7), 231(7), 233(7), and 82(7), February 2000.

Revised Pages for Final Site-Specific Work Plan for Engineering Evaluation \ Cost Analysis Fill Area Definition, Parcels 78(6), 79(6) 80(6), 81(5), 175(5), 230(7), 227(7), 229(7) Letter dated February 17, 2000.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager 7-24-01 Date

Approved by: Stanley E. Sandt, USACE, 7-25-01 Date

Project Manager Approval: Jeanne Yacoub 7/25/01 Date

QA Approval:Randy McBride 7/30/01 Date

APPENDIX L

ADEM SOLID WASTE DISPOSAL FACILITY PERMITS PARCELS 175(5) AND 81(5)

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE DISPOSAL FACILITY PERMIT

Permittee: U.S. Army Garrison
Permit Number 08-02
Fort McClellan Industrial Landfill
Calhoun County, Alabama

Pursuant to the Solid Wastes Disposal Act, Code of Ala. 1975, Section 22-27-1, et. seq., as amended, and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued to the U.S. Army Garrison (hereinafter called the Permittee) to operate the solid waste disposal facility, known as the Fort McClellan Industrial Landfill, comprising approximately 53 acres within the Fort McClellan military reservation in a portion of Section 10, Township 15 South, Range 8 East, Calhoun County.

The disposal of wastes is permitted over the closed sanitary waste areas that comprise approximately 40.4 acres and in the areas previously designated as the Construction Materials Area and Controlled Area that total approximately 12.6 acres. The Permittee may dispose of up to 1200 tons per day of non-hazardous industrial and construction/demolition (C/D) wastes, including C/D debris, tires, trees, tree limbs and stumps, miscellaneous plastic and paper, packing and crating debris, asbestos, and similar types of inert or construction/demolition wastes collected from the Fort McClellan reservation.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions set forth herein (including those in any attachments), and the applicable regulations contained in Chapters 335-13-1 through 335-13-8 of the Alabama Department of Environmental Management Administrative Code (hereinafter referred to as the "ADEM Admin. Code"). Applicable ADEM Admin. Codes are those which are in effect on the date of issuance of this permit.

This permit is based on the information submitted in the application for the permit issued on October 12, 1995, and all subsequent documents and reports that have been issued to amend, modify, and renew that permit. (The information is hereby incorporated by reference and hereinafter referred to as the Application). Any inaccuracies found in the application information could lead to the termination or modification of this permit and potential enforcement action (Chapter 335-13-5 of the ADEM Admin. Code). The Permittee must inform ADEM of any deviation from or changes in the information in the Application which would affect the Permittee's ability to comply with the applicable ADEM Admin. Code or permit conditions.

This permit is effective as of November 27, 2000 and shall remain in effect until November 26, 2005, unless suspended or revoked (See Rule 335-13-5-.05).

Alabama Department of Environmental Management

11/27/00
Date Signed

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SECTION I

STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is allowed to dispose of non-hazardous solid waste in accordance with the conditions of this permit. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Code of Ala. 1975, Section 22-27-1, et. seq., as amended, or any other law governing protection of public health or the environment for any imminent and substantial endangerment to human health, welfare, or the environment.

I.B. PERMIT ACTIONS

This permit may be suspended, revoked or modified for cause as specified in Rules 335-13-5-.05 or 335-13-5-.06 of the ADEM Administrative Code. The filing of a request for a permit modification, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, and the suspension or revocation does not stay the applicability or enforceability of any permit condition.

I.C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

I.D. DEFINITIONS

For the purpose of this permit, terms used herein shall have the same meaning as those in Chapters 335-13-1 through 335-13-8 of the ADEM Administrative Code, unless this permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. "EPA" for purposes of this permit means the United States Environmental Protection Agency.

2. "Permit application", for the purposes of this permit, means all permit application forms, design plans, operational plans, closure plans, technical data, reports, specifications, plats, geological and hydrogeological reports, and other materials which are submitted to the Department in pursuit of a solid waste disposal permit pursuant to the requirements of Chapters 335-13-4 and 335-13-5.

I.E. DUTIES AND REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit except to the extent and for the duration such noncompliance is authorized by a variance granted pursuant to Rule 335-13-8-.01. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of Code of Ala. 1975, Section 22-27-1 et. seq., as amended, and is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application. (See Rules 335-13-5-.05 and 335-13-5-.06 of the ADEM Administrative Code.)

2. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The renewal application must be submitted to the Department at least 180 days before this permit expires. (See Rule 335-13-5-.02(3) of the ADEM Administrative Code.)

3. Permit Expiration

This permit and all conditions therein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application as required by Condition I.E.2. and, through no fault of the Permittee, the Department has not made a final permit decision regarding the renewal application.

4. Need to Halt or Reduce Activity Not A Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit and the ADEM Administrative Code.

5. Duty to Mitigate

In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate operator staffing and training, and adequate operational controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

7. Duty to Provide Information

If requested, the Permittee shall furnish to the Department, within a reasonable time, any relevant information needed to determine whether cause exists for denying, suspending, revoking, or modifying this permit, or to determine compliance with this permit. If requested, the Permittee shall also furnish the Department with copies of records kept as a requirement of this permit.

8. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the duly designated officer and employees of the Department or their authorized representative to:

a. Enter at reasonable times the Permittee's premises where the regulated facility or activity is located or conducted; or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor, at reasonable times, any substances or parameters at any location for the purposes of assuring permit compliance or as otherwise authorized by Code of Ala. 1975, Section 22-27-1 et. seq., as amended. (See Rule 335-13-6-.01 of the ADEM Administrative Code)

9. Monitoring, Corrective Actions, and Records

a. Samples and measurements taken for the purpose of monitoring or corrective action shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from Chapter 335-13-4 of the ADEM Administrative Code or the methods as specified in the Permit Application attached hereto and incorporated by reference. Laboratory methods must be those specified in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), other appropriate EPA methods, or as specified in the permit application. All field tests must be conducted using approved EPA test kits and procedures.

b. The Permittee shall retain records, at the location specified in Condition I.I.5., of all monitoring, or corrective action information, including all calibration and maintenance records, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. These periods may be extended by the request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility (see Rule 335-13-4-.29).

c. Records of monitoring and corrective action information shall include:

i. The exact place, date, and time of sampling or measurement;

ii. The individual(s) and company who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. The individual(s) and company who performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

d. The Permittee shall submit all monitoring and corrective action results at the intervals specified elsewhere in this permit.

10. Reporting Planned Changes

The Permittee shall notify the Department, in the form of a request for permit modification, at least 90 days prior to any change in the permitted service area, increase in the waste received, or change in the design or operating procedure as described in this permit, including any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, in accordance with Rule 335-13-5-.02 of the ADEM Administrative Code.

11. Transfer of Permit

This permit may be transferred to a new owner or operator only according to the provisions of Rule 335-13-5-.07 of the ADEM Administrative Code. All requests for transfer of permits shall be in writing and shall be submitted on forms provided by the Department.

Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of this permit and Chapters 335-13-1 through 335-13-8 of the ADEM Administrative Code.

12. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule required and approved by the Department shall be submitted no later than 14 days following each schedule date.

13. Other Noncompliance

The Permittee shall report all instances of noncompliance not otherwise required by Condition I.E.10. and I.E.13. at the time monitoring reports are submitted.

14. Other Information

If the Permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be promptly submitted by the Permittee. In addition, upon request, the Permittee shall furnish to the Department any information related to compliance with the permit.

I.F. DESIGN AND OPERATION OF FACILITY

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of contaminants (including leachate and explosive gases) to air, soil, groundwater, or surface water that could threaten human health or the environment.

I.G. INSPECTION REQUIREMENTS

1. The Permittee shall comply with all requirements set forth under Rule 335-13-4-.21 of the ADEM Administrative Code.

2. The Permittee shall conduct random inspections of incoming loads as required by Rule 335-13-4-.21.

3. Records of all inspections shall be included in the operating record required by Condition I.I.1.

I.H. PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by Rules 335-13-4-.21 of the ADEM Administrative Code. The Permittee shall maintain training documents and records as a part of the operating record required by Condition I.I.1.

I.I. RECORDKEEPING AND REPORTING

1. Operating Record

The Permittee shall maintain a written operating record at the location specified in Condition I.I.5. In accordance with Rule 335-13-4-.29 of the ADEM Administrative Code, the operating record shall include:

a. Documentation of inspection and maintenance activities.

b. Daily volume reports.

c. Personnel training records.

d. Waste certifications and disposal approvals for Special Wastes, Industrial Wastes, etc.

e. Groundwater monitoring records.

f. Explosive gases monitoring records.

g. Surface water and leachate monitoring records.

h. Application and other pertinent operating, inspection, maintenance, and monitoring information.

i. Copies of all variances granted by the Department, including copies of all approvals of special operating conditions (such as approvals for open burning, Condition II.B.).

2. Quarterly Volume Report

Beginning with the effective date of this permit, the Permittee shall submit, within thirty (30) days after the end of each calendar quarter, a report summarizing the daily waste receipts for the previous (just ended) quarter. Copies of the quarterly reports shall be maintained in the operating record required by Condition I.I.1. (Rule 335-13-4-.29(1)(c))

3. Monitoring and Corrective Action Reports

The Permittee shall submit reports on all monitoring and corrective activities conducted pursuant to the requirements of this permit and Division 13 of the ADEM Administrative Code, including, but not limited to, groundwater, surface water, and leachate monitoring. These reports shall be submitted in May and November of each year or as specified by the Department. The May report shall include all results and conclusions from samples and measurements conducted during the period beginning with the previous October and ending with the previous March. The November report shall include all results and conclusions from samples and measurements conducted during the period beginning with the previous April and ending with the previous September. Copies of the reports shall be maintained in the operating record required by Condition I.I.1.

4. Availability, Retention, and Disposition of Records

a. All records, including plans, required under this permit or Division 13 of the ADEM Administrative Code, must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of the Department.

b. All records, including plans, required under this permit or Division 13 of the ADEM Administrative Code, shall be retained by the Permittee for a period of at least three (3) years except those required by Condition I.I.5. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility, or as requested by the Department.

c. A copy of records of waste disposal locations and quantities must be submitted to the Department and local land authority upon closure of the facility.

5. Documents to be Maintained by the Permittee

The Permittee shall maintain, at the U.S. Army Garrison, Building 215, Fort McClellan, the following documents and amendments, revisions and modifications to these documents as required by Rule 335-13-4-.29 of the ADEM Administrative Code until closure is certified by an independent registered engineer (State of Alabama):

a. Closure Plan as required by Rule 335-13-4-.20 of the ADEM Administrative Code and Section VII of this permit.

b. Operating record as required by Condition I.I.1. of this permit.

c. Inspection schedules and records as required by Condition I.G. of this permit.

d. Solid/Hazardous Waste Determination Forms for Industrial Wastes, and associated Departmental disposal approval correspondence.

e. Maintenance and Monitoring Records (Gas, Groundwater, Leachate, Water, etc.).

f. Copies of this Permit and of the Permit Application.

6. All reports, notifications, or other submissions which are required by this permit should be sent via mail or hand delivered to:

Mailing Address:
Chief, Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

Physical Address:
Chief, Land Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

I.J. SIGNATORY REQUIREMENT

All applications, reports or information required by this permit, or otherwise submitted to the Department, shall be signed and certified by the owner as follows:

1. If an individual, by the applicant;

2. If a city, county, or other municipality or governmental entity, by the ranking elected official, or by a duly authorized representative of that person;

3. If a corporation, organization, or other legal entity not addressed by Conditions I.J.1. or I.J.2., by a principal executive officer, of at least the level of Safety Director, or by a duly authorized representative of that person.

I.K. CONFIDENTIAL INFORMATION

The Permittee may claim information submitted as confidential if the information is protectable under Code of Alabama 1975 § 22-39-18, as amended.

I.L. STATE LAWS AND REGULATIONS

Nothing in this permit shall be construed to preclude the initiation of any legal action or to relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

I.M. REGULATION CITATIONS

Rules of the ADEM Administrative Code Division 13 Regulations are set forth in this document for the purpose of Permittee reference. Any Rule which is cited incorrectly in this document does not constitute grounds for non-compliance on the part of the Permittee.

SECTION II

GENERAL OPERATING CONDITIONS

II.A. OPERATION OF FACILITY

The Permittee shall operate and maintain the disposal facility consistent with the permit application, this permit, and the ADEM Division 13 Administrative Code.

II.B. OPEN BURNING

The Permittee shall not allow open burning without prior written approval from the Department and other appropriate agencies. A burn request should be submitted in writing to the Department outlining why a burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation. The approval, if granted, shall be included in the operating record as required by Condition I.I.1.

II.C. PREVENTION OF UNAUTHORIZED DISPOSAL

The Permittee shall follow the approved procedures for detecting and preventing the disposal of free liquids, regulated hazardous waste, PCB's, and medical waste at the facility as required by Rule 335-13-4-.21.

II.D. UNAUTHORIZED DISCHARGE

The Permittee shall operate the disposal facility in such a manner that there will be no water pollution or unauthorized discharge as required by Rule 335-13-4-.21(1)(d). Any discharge from the disposal facility or practice thereof may require a National Pollutant Discharge Elimination System (NPDES) permit under the Alabama Water Pollution Control Act.

II.E. INDUSTRIAL WASTE DISPOSAL

The Permittee may dispose of the industrial process waste, as required by Rule 335-13-4-.21(1)(c).

II.F. BOUNDARY MARKERS

The Permittee shall ensure that the facility is identified with a sufficient number of permanent boundary markers which are at least visible from one marker to the next as required by Rule 335-13-4-.21(1)(e). A complete legal property description can be found in the permit application and Section VIII of this permit.

SECTION III

SPECIFIC LANDFILL REQUIREMENTS

III.A. WASTE IDENTIFICATION AND MANAGEMENT

1. Subject to the terms of this permit, the Permittee may dispose of the non-hazardous solid wastes listed in Table III.1. The disposal of any other wastes must be approved by the Department.

2. The total area of the facility is approximately 53 acres, as described in the permit application and Section VIII of this permit. The areas permitted for disposal include the closed sanitary disposal areas of approximately 40.4 acres and the areas designated (or previously designated) as the Construction Materials Area and the Controlled Area (both total approximately 12.6 acres). (Note: An area of 8.27 acres identified in the application, i.e., on the map of 1/31/94, as the Proposed Settling Pond Area is not included in the authorized disposal area or the acreage of the facility.)

3. The Permittee shall maintain and operate the facility in accordance with the procedures described in the permit application.

4. The average daily volume of waste disposed at the facility shall not exceed 1200 tons/day, except as provided under Rule 335-13-5-.06(2)(a)5.

5. The Permittee shall not receive waste for disposal from any source other than that described below (Table III.1), except waste which is granted a temporary or one-time waiver by the Director pursuant to Rule 335-13-5-.06(1)(a).

III.B. SPECIAL WASTES

The disposal of special wastes is subject to a Hazardous/Solid Waste Determination by the Special Waste Section of the Solid Waste Branch of the Land Division of the Alabama Department of Environmental Management.

1. Asbestos Waste

   The Permittee shall dispose of asbestos waste as required by Rule 335-13-4-.26(2).

2. Foundry Sand

   The Permittee may not dispose of foundry sand.

3. Petroleum Contaminated Waste

The Permittee may dispose of petroleum contaminated waste as required by Rule 335-13-4-.26(4).

TABLE III.1.

APPROVED WASTE STREAM AND SERVICE AREA

WASTE STREAM:

Non-hazardous industrial and construction/demolition (C/D) wastes, including C/D debris, tires, trees, tree limbs and stumps, miscellaneous plastic and paper, packing and crating debris, asbestos, and similar types of inert or construction/demolition wastes.

SERVICE AREA:

Fort McClellan Military Reservation

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4. Municipal Solid Waste Ash

The Permittee may not dispose of municipal solid waste ash.

5. Medical Waste

a. The Permittee shall not dispose of untreated medical waste. (See Rule 335-13-7-.09.)

b. The Permittee shall not dispose of treated medical waste in accordance with Rule 335-13-7-.10.

III.C. COVER REQUIREMENTS

The Permittee shall cover all waste as required by Rules 335-13-4-.15(1) and (2), and 335-13-4-.23(1), or as specified in the permit application. This shall include, but not be limited to weekly cover, intermediate cover, and grading and final cover. Earth cover materials shall be of the minimum quality and minimum clay content specified in Rule 335-13-4-.18. Completed portions of the facility shall have a vegetative or some other appropriate cover to minimize erosion and, when applicable, maximize evapotranspiration.

III.D. DAILY CELLS

The Permittee shall confine waste to as small an area as possible and shall spread waste to a depth not to exceed 2 feet before compaction, as required by Rules 335-13-4-.23(1)(b) and (c). Compaction shall be accomplished on a maximum slope of 25% as required by Rule 335-13-4-.23(1)(c).

III.E. WASTE COMPACTION

The Permittee shall compact all waste as required by Rule 335-13-4-.23(1)(b). A completed daily cell shall not exceed 8 feet in vertical thickness, measured perpendicular to the slope of the preceding cell. Waste such as construction/demolition waste that cannot be managed by landfill equipment in this manner shall be managed according to the permit application or as otherwise approved by the Department.

III.F. SCAVENGING AND SALVAGING OPERATIONS

The Permittee shall prevent scavenging as required by Rule 335-13-4-.23(2)(a) The Permittee shall control salvaging operations as required by Rule 335-13-4-.23(2)(a) as part of a recycling effort. Any recycling operation must be in accordance with plans submitted and approved by the Department.

III.G. LITTER CONTROL

The Permittee shall control litter as required by Rule 335-13-4-.23(2).

III.H. OTHER PERMITS

The Permittee shall operate the landfill according to this and any other applicable permits as required by Rule 335-13-4-.23.

III.I. PERSONNEL AND TRAINING

The Permittee shall maintain adequate personnel to ensure continued and smooth operation of the facility as required by Rule 335-13-4-.23(1)(h).

III.J. EQUIPMENT

The Permittee shall provide the landfill equipment, and shall have access to stand-by equipment, as required by Rule 335-13-4-.23(1)(i).

III.K. ALL WEATHER ACCESS ROADS

The Permittee shall provide an all-weather access road to the dumping face that is wide enough to allow passage of collection vehicles as required by Rule 335-13-4-.23(2)(d).

III.L. VECTOR CONTROL

The Permittee shall provide for vector control as required by Rule 335-13-4-.23(2)(g).

III.M. ADVERSE WEATHER DISPOSAL

The Permittee shall provide for disposal activities in adverse weather conditions as required by Rule 335-13-4-.23(1)(g).

III.N. SECURITY

The Permittee shall provide artificial and/or natural barriers which prevent entry of vehicular traffic to the facility except when authorized operating personnel are on duty. These barriers shall be as required by Rule 335-13-4-.23(1)(e).

III.O. SIGNS

The Permittee shall provide a sign outlining instructions for use of the site. The sign shall be posted and have the information required by Rule 335-13-4-.23(1)(f).

III.P. ENVIRONMENTAL MONITORING AND TREATMENT STRUCTURES

The Permittee shall provide protection and proper maintenance of environmental monitoring and treatment structures as required by Rule 335-13-4-.23(2)(e).

III.Q. CLOSURE

The Permittee shall close completed sites or completed portions of sites as required by Rule 335-13-4-.23(2)(c), and Section VII of this permit.

III.R. RECORDS

The Permittee shall maintain records on the daily volume of waste received at the landfill (Rule 335-13-4-.23(2)(f)). The Permittee shall submit a quarterly report as required by Condition I.I.2.

III.S. LARGE DEAD ANIMALS AND HIGHLY PUTRESCIBLE WASTES

The Permittee shall not dispose of large dead animals and/or highly putrescible waste.

III.T. OTHER REQUIREMENTS

The Department shall enhance or reduce any requirements for operating and maintaining the landfill as deemed necessary by the Land Division in accordance with Rule 335-13-4-.23(3).

III.U. BULK OR NONCONTAINERIZED LIQUID WASTE

The Permittee shall not dispose of bulk or noncontainerized liquid waste, or containers capable of holding liquids, unless the conditions of Rule 335-13-4-.23(2)(j) are met.

III.V. EMPTY CONTAINERS

The Permittee shall render empty containers larger than 10 gallons unsuitable for holding liquids prior to delivery to the landfill unit unless otherwise approved by the Department.

III.W. SEPTIC TANK PUMPINGS AND SEWAGE SLUDGE

The Permittee shall not dispose of septic tank pumpings and/or sewage sludge unless specifically approved in writing by ADEM, as required by Rule 335-13-4-.24.

SECTION IV

GROUNDWATER MONITORING REQUIREMENTS

IV.A. WELL LOCATION, INSTALLATION, AND CONSTRUCTION

The Permittee shall install and/or maintain a groundwater monitoring system to comply with the requirements of Rule 335-13-4-.14 as specified below.

1. The permittee shall maintain the groundwater monitoring wells and piezometers identified in Table IV.1., the wells specified in Condition IV.A.3., or any other groundwater monitoring wells added to the monitoring well system.

2. The Permittee shall maintain groundwater monitoring well MW5-94 as the background groundwater monitoring well for the facility.

3. The Permittee shall install and maintain additional groundwater monitoring wells as necessary to assess changes in the rate and extent of any plume of contamination or as otherwise deemed necessary to maintain compliance with Rule 335-13-4-.14. A plan with a permit modification request, which includes the information listed below, specifying the design and location of any additional monitoring wells shall be submitted and approved prior to the installation. After the installation of the well(s), the Permittee shall submit a report within 30 days after installation to the Department which, at a minimum, shall include the surveyed location and elevation, surveyed elevation reference point, total depth, screened interval, well log and other pertinent information.

    a. Well construction techniques including proposed casing depths, proposed total depth, and proposed screened interval of well(s);

    b. Well development method(s);

    c. A complete analysis of well construction materials;

    d. A schedule of implementation for construction; and

    e. Provisions for determining the lithologic characteristics, hydraulic conductivity and grain-size distribution for the applicable aquifer unit(s) at the location of the new well(s).

IV.B. BACKGROUND STANDARD

Background standards shall be established for the groundwater monitoring parameters specified in Table IV.2., as required by 335-13-4-.14(1)(c).

IV.C. GROUNDWATER MONITORING REQUIREMENTS

1. The Permittee shall determine the groundwater surface elevation at each monitoring well and piezometer identified in Condition IV.A. each time the well or piezometer is sampled and at least semi-annually throughout the active life and post-closure care period(as specified in Condition VII.F.). The data or information specified above should be submitted in accordance with Condition I.I.3. (Rule 335-13-4-.14(1)(c))

2. The Permittee shall determine the groundwater flow rate and direction in the first zone of saturation at least annually or each time groundwater is sampled, and the information should be submitted in accordance with Condition I.I.3.

3. Prior to the initial receipt of waste, the Permittee shall sample, and analyze for the parameters listed in Appendix I of Rule 335-13-4-.27, and/or any other parameters specified by the Department in Table IV.2., all monitoring wells identified in Condition IV.A. to establish background water quality. The records and results of this sampling and analysis activity shall be submitted to the Department, within sixty (60) days after the date of sampling, for incorporation into Table IV.2. and/or the facility's file.

4. The Permittee shall sample, and analyze for the parameters listed in Appendix I of Rule 335-13-4-.27, and/or any other parameters specified by the Department in Table IV.3., all monitoring wells identified in Condition IV.A. on a semi-annual basis throughout the active life of the facility and the post-closure care period. Sampling shall be conducted during March and September of each year, beginning with the effective date of this permit, throughout the active life of the facility and throughout the post-closure care period.

5. In addition to the requirements of Conditions IV.C.1., IV.C.2., IV.C.3., and IV.C.4. above, the Permittee shall record water levels, mean sea level elevation measuring point, depth to water, and the results of field tests for pH and specific conductance at the time of sampling for each well.

IV.D. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Condition IV.A. to provide a reliable indication of the quality of the groundwater as required under Rules 335-13-4-.14(1)(c) and 335-13-4-.27(2).

1. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in the permit application. Monitoring wells shall be bailed or pumped to remove at least four times the well volume of water. Slow recharge wells shall be bailed until dry. Wells shall be allowed to recharge prior to sampling.

2. Samples shall be analyzed according to the procedures specified in the permit application, Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), or other appropriate methods approved by this Department. All field tests must be conducted using approved EPA test kits and procedures. (Condition I.E.9.a)

3. Samples shall be tracked and controlled using the chain-of-custody and QA\QC procedures specified in the permit application.

IV.E. RECORDKEEPING AND REPORTING REQUIREMENTS

1. Recording of Results

   For each sample and/or measurement taken pursuant to the requirements of this permit, the Permittee shall record the information required by Condition I.E.9.c.

2. Recordkeeping

   Records and results of all groundwater monitoring, sampling, and analysis activities conducted pursuant to the requirements of this permit shall be included in the operating record required by Condition I.I.1.

IV.F. PERMIT MODIFICATION

If at any time the Permittee or the Department determines that the groundwater monitoring system no longer satisfies the requirements of Rule 335-13-4-.14 of the ADEM Admin. Code or Condition IV.A. of this permit, the Permittee must, within 90 days, submit an application for a permit modification to make any necessary and/or appropriate changes to the system.

TABLE IV.1.
GROUNDWATER MONITORING WELLS

MONITORING WELL NUMBER	WELL TYPE*	WELL DEPTH** (ft-btoc)	ZONE MONITORED
MW1-94	Downgradient	40	First/Residuum
MW2-94	Downgradient	36	First/Residuum
MW3-94	Downgradient	31	First/Residuum
MW4-94	Downgradient	25	First/Residuum
MW5-94	Upgradient	32	First/Residuum

* Piezometer, monitoring well, etc.

** ft-bls = Depth in feet below land surface. (Note: All groundwater elevations and well depths should be submitted to ADEM for any new wells that have been installed.)

TABLE IV.2.

BACKGROUND STANDARD

PARAMETER	CONCENTRATION LIMIT (mg/L) PDWS	BACKGROUND

NOTE: The parameters in this Table are those listed in Appendix I of Chapter 335-13-4 of the ADEM Solid Waste Regulations.

NOTE: If not accomplished previously, the Permittee shall, in accordance with IV.C.3, conduct a minimum of four independent sampling events as the initial sampling event for each well, and analyze for the parameters listed above, in order to establish background water quality. At any time following the four independent events, the Permittee can submit a request, with justification, for the deletion of or change in these parameters.

TABLE IV.3.

SEMI-ANNUAL GROUNDWATER MONITORING

PARAMETER	CONCENTRATION LIMIT (mg/L) PDWS	BACKGROUND

NOTE: The parameters in this Table are those listed in Appendix I of Chapter 335-13-4 of the ADEM Solid Waste Regulations.

SECTION V

GAS MONITORING REQUIREMENTS

V.A. GENERAL REQUIREMENTS

The Permittee shall design, construct, and operate the facility so as to control and monitor the generation and emission of explosive gases (such as methane), as required by Rule 335-13-4-.16, and so as to prevent said gases from collecting in, under, or around structures at concentrations exceeding the limits imposed by this permit and as required by Rule 335-13-4-.16 of the ADEM Admin. Code.

V.B. SYSTEMS AND EQUIPMENT

The Permittee shall provide, install, and maintain gas monitoring and/or recovery systems and equipment as required by Rules 335-13-4-.16(2)(a) and (b) of the ADEM Admin. Code. Instruments used to conduct gas monitoring in the soil and sub-surface shall be capable of obtaining gas samples from a minimum depth of four feet.

V.C. CONCENTRATION LIMITS

The Permittee shall prevent explosive gases from exceeding:

1. The lower explosive limit at the facility boundary, and

2. Twenty-five percent (25%) of the lower explosive limit in any facility structure other than those which are components of the gas control and/or recovery system as required by Rules 335-13-4-.16(1) and (2).

V.D. GAS MONITORING PROGRAM

1. The Permittee shall provide a plan and monitor explosive gases at the facility as required by Rule 335-13-4-.16(2)(c) of the ADEM Admin. Code. The gas monitoring program shall monitor explosive gas concentrations in the atmosphere, in the soil, and inside all structures at the facility, including but not limited to buildings, drop inlets, culverts, under bridges, and any other location which is conducive to gas accumulation. Gas monitoring data shall be included in the operating record required by Condition I.I.1. and shall be made available to the Department during inspections and at other times upon request. (Rule 335-13-4-.16(2)(c))

2. The Permittee shall conduct the gas monitoring described in Condition V.D.1. at least once each year as required by Rule 335-13-4-.16(2)(c)2. The Permittee shall submit a report to the Department within thirty (30) days after each monitoring event documenting the levels of explosive gases measured at the facility.

3. In the event that explosive gas levels exceed, at any time, the limits specified in this permit, the Permittee shall:

   a. Immediately take all necessary steps to ensure immediate protection of human health and property.

   b. Immediately notify the Department of the explosive gas levels detected and the immediate steps taken to protect human health and property; and

   c. Within twenty (20) days, submit to the Department for approval a remedial plan for the explosive gas releases. This plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall be implemented upon approval by the Department, but within sixty (60) days of detection. Also within the sixty (60) days the plan shall be placed in the operating record of the facility and the Department notified that the plan has been implemented. (Rule 335-13-4-.16(2)(c)3.)

4. Monitoring points for the measurement of explosive gas concentrations in the soil and/or atmosphere shall be located along the landfill boundaries and shall be spaced no more than 300 feet apart. In areas where the landfill boundary is within 1000 feet of a dwelling, the monitoring points shall be no more than one hundred (100) feet apart.

SECTION VI

LEACHATE AND WATER MANAGEMENT REQUIREMENTS

VI.A. LEACHATE MANAGEMENT

The Permittee shall, upon the recognition of leachate, notify the Department within 14 days. At this time, the Permittee will inform the Department of the measures that will be taken to address further leachate problems.

VI.B. SURFACE WATER MANAGEMENT

The Permittee shall construct and maintain run-on and run-off control structures as required by Rule 335-13-4-.17. Any discharges from said drainage control structures shall be permitted by the Alabama Department of Environmental Management Water Division.

SECTION VII

CLOSURE AND POST-CLOSURE REQUIREMENTS

VII.A. FINAL COVER

The Permittee shall grade final soil cover such that surface water does not pond over the permitted area as required by Rule 335-13-4-.20(2)(c)1. The grade of the final cover shall not exceed 25 percent and shall be a minimum of five percent. Final grading shall be provided within 90 days after disposal has either reached the final approved elevations, or ceased to occur. (Rule 335-13-4-.20(2)(c)5.)

VII.B. VEGETATIVE COVER

The Permittee shall establish a vegetative or other appropriate cover within 90 days after completion of final grading requirements as required by Rule 335-13-4-.20(2)(d). Preparation of a vegetative cover shall include, but not be limited to, the placement of seed, fertilizer, mulch, and water.

VII.C. NOTICE OF INTENT

The Permittee shall place in the operating record, as well as notifying the Department of their Intent to Close the landfill prior to beginning closure. (Rule 335-13-4-.20(2)(e))

VII.D. COMPLETION OF CLOSURE ACTIVITIES

The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of the last known receipt of waste. (Rule 335-13-4-.20(2)(g))

VII.E. CERTIFICATION OF CLOSURE

Following closure of each unit, the Permittee must submit to the Department a certification, signed by an independent registered engineer, verifying the closure has been completed according to the Closure Plan. (Rule 335-13-4-.20(2)(h))

VII.F. POST-CLOSURE CARE PERIOD

Post-closure care activities shall be conducted after closure of each unit throughout the life of this permit and continuing for a period of thirty (30) years following closure of the facility. The Department may shorten or extend the post-closure care period applicable to the solid waste disposal facility in accordance with Rule 335-13-4-.20(3)(b). The Permittee shall reapply in order to fulfill the post-closure care requirements of Rule 335-13-4-.20(3) and this permit.

VII.G. POST-CLOSURE MAINTENANCE

The Permittee shall provide post closure maintenance of the facility to include regularly scheduled inspections as described in the permit application, and as required by Rule 335-13-4-.20(3). This shall include maintenance of the cover, vegetation, monitoring devices and pollution control equipment and correction of other deficiencies which may be observed by the Alabama Department of Environmental Management. Monitoring requirements shall continue throughout the post closure period as determined by the Department unless all waste is removed and no unpermitted discharge to waters of the State have occurred.

VII.H. POST-CLOSURE USE OF PROPERTY

The Permittee shall ensure that post closure use of the property never be allowed to disturb the integrity of the final cover, liner, or any other component of the containment system as required by Rule 335-13-4-.20(3)(d). This shall preclude the growing of deep-rooted vegetation, such as trees, on the closed area.

VII.I. CERTIFICATION OF POST-CLOSURE

Following post-closure of each unit, the Permittee must submit to the Department a certification, signed by an independent registered engineer, verifying the post-closure has been completed according to the Post-Closure Plan. (Rule 335-13-4-.20(3)(e))

VII.J. NOTICE IN DEED TO PROPERTY

The Permittee shall record a notation onto the land deed containing the property utilized for disposal within 90 days after permit expiration, revocation or when closure requirements are achieved as required by Rule 335-13-4-.20(2)(i). This notation shall state that the land has been used as a solid waste disposal facility, the name of the Permittee, type of disposal activity, location of the disposal facility and beginning and closure dates of the disposal activity.

VII.K. RECORDING INSTRUMENT

The Permittee shall submit a certified copy of the recording instrument to the Department within 120 days after permit expiration, revocation, or as directed by the Department as required by Rule 335-13-4-.20(2)(j).

VII.L. REMOVAL OF WASTE

If the Permittee, or any other person(s), wishes to remove waste, waste residues, the liner, or any contaminated soils, the owner must request and receive prior approval from the Department. (Rule: 335-13-4-.20(3)(f))

SECTION VIII

LEGAL DESCRIPTION

RECENTLY CLOSED SANITARY WASTE DISPOSAL AREA: A tract of land located in Section 10, Township 15 South, Range 8 East, Calhoun County, Alabama, containing 18.55 acres, more or less, and being more particularly described as follows: Commence at United States Army Corps of Engineers monument number A7-6F, said monument being located at coordinates 1,175,530.975 North, 515,927.757 East, Alabama East Zone, Transverse Mercator, NAD 1927; thence run N 36 degrees 46'53"W for 4,275.07' to the point of beginning of the herein described tract; thence run N 73 degrees 18'25"E for 1,029.02'; thence run N 2 degrees 44'19"E for 712.65'; thence run N 82 degrees 16'54"W for 78.06'; thence run S 80 degrees 40'15"W for 456.14'; thence run S 78 degrees 41'40"W for 489.07'; thence run S 23 degrees 42'21"W for 234.88'; thence run S 68 degrees 47'53"E for 151.35'; thence run S 12 degrees 24'20"W for 286.37'; thence run S 80 degrees 07'15"W for 60.58'; thence run S 12 degrees 07'16"E for 294.78' to the point of beginning.

PREVIOUSLY CLOSED SANITARY WASTE DISPOSAL AREA: A tract of land located in Section 10, Township 15 South, Range 8 East, Calhoun County, Alabama, containing 21.89 acres, more or less, and being more particularly described as follows: Commence at United States Army Corps of Engineers monument number A7-6F, said monument being located at coordinates 1,175,530.975 North, 515,927.757 East, Alabama East Zone, Transverse Mercator, NAD 1927; thence run N 38 degrees 15'27"W for 3,842.65' to the point of beginning of the herein described tract; thence run N 75 degrees 05'10"E for 230.72'; thence run N 84 degrees 16'48"E for 231.27'; thence run N 73 degrees 59'55"E for 705.77'; thence run N 71 degrees 17'34"E for 308.07'; thence run N 73 degrees 56'08"E for 381.68'; thence run N 1 degree 26'42"E for 520.80'; thence run S 73 degrees 12'24"W for 307.77'; thence run S 73 degrees 18'25"W for 1,763.26'; thence run S 23 degrees 55'26"W for 444.86' to the point of beginning.

Note: Legal description continued on next page.

LEGAL DESCRIPTION (Cont.)

CONSTRUCTION MATERIALS AREA: A tract of land located in Section 10, Township 15 South, Range 8 East, Calhoun County, Alabama, containing 9.48 acres, more or less, and being more particularly described as follows: Commence at United States Army Corps of Engineers monument number A7-6F, said monument being located at coordinates 1,175,530.975 North, 515,927.757 East, Alabama East Zone, Transverse Mercator, NAD 1927; thence run N 22 degrees 56'15"W for 4,038.96' to the point of beginning of the herein described tract; thence run N 73 degrees 18'25"E for 734.24'; thence run N 9 degrees 31'18"W for 310.02'; thence run N 9 degrees 34'22"W for 290.80'; thence run S 78 degrees 10'36"W for 500.0'; thence run N 82 degrees 16'54"W for 80.98'; thence run S 2 degrees 44'19"W for 712.65' to the point of beginning.

CONTROLLED AREA: A tract of land located in Section 10, Township 15 South, Range 8 East, Calhoun County, Alabama, containing 3.16 acres, more or less, and being more particularly described as follows: Commence at United States Army Corps of Engineers monument number A7-6F, said monument being located at coordinates 1,175,530.975 North, 515,927.757 East, Alabama East Zone, Transverse Mercator, NAD 1927; thence run N 12 degrees 29'32"W for 4,025.82' to the point of beginning of the herein described tract; thence run N 9 degrees 31'18"W for 310.02'; thence run N 9 degrees 34'22"W for 290.80'; thence run S 60 degrees 54'47"E for 411.50'; thence run S 9 degrees 19'24"W for 119.76'; thence run S 16 degrees 16'06"E for 193.10'; thence run S 73 degrees 12'25"W for 307.77' to the point of beginning.

SECTION IX

VARIANCE

IX.A. **Affected Requirement:** Monitoring Explosive Gases

Affected Section(s) and/or Subsection(s) of Permit: V.

Affected Rule(s): 335-13-4-.16

Justification and Description of Variance: Explosive gas monitoring shall be required annually. There are no buildings nearby, and the roads, ditches, etc. surrounding the disposal areas and the relatively shallow depths of wastes make it unlikely that explosive gases will present a problem. Thus, it has been determined that the reduced monitoring will not threaten the public health or unreasonably create environmental pollution.

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